

Pesticide Resistance

San Jose Scale

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Laboratory trials were started in 1994 at the Kearney Agricultural Center to evaluate the possible resistance of San Jose scale (SJS) to chlorpyrifos (Lorsban), an organophosphate insecticide commonly used in dormant sprays in deciduous fruit orchards. Sources of SJS used in these tests were from a long-term laboratory colony (susceptible strain), a field colony from a stone fruit orchard at Kearney unsprayed for over 20 years, and two commercial orchards from the Reedley-Parlier area. Preliminary results from late 1994 indicated considerable differences in susceptibility among the four SJS colonies to chlorpyrifos (Fig. 1).

The results of these laboratory tests in 1994 show 100% mortality of SJS treated at 5.62 ppm when 24 to 48 hr old (whitecaps), while one of the field collected strains of SJS showed only 76.1% mortality at 562 ppm chlorpyrifos.

A fresh supply of wild gourds was collected in October 1995, and additional replications and dose rates of chlorpyrifos against SJS are being tested at the present time. If continued testing in the laboratory continues to show the same trends in dose-mortality of SJS, it could be anticipated that significant levels of resistance to OP insecticides are present in field populations of San Jose scale.

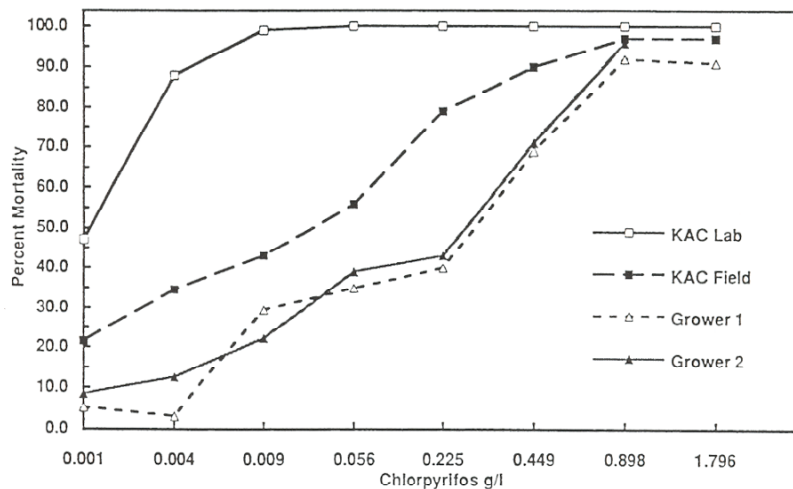


Fig. 1. Mortality of San Jose scale on gourds at increasing concentrations of chlorpyrifos in laboratory trials.